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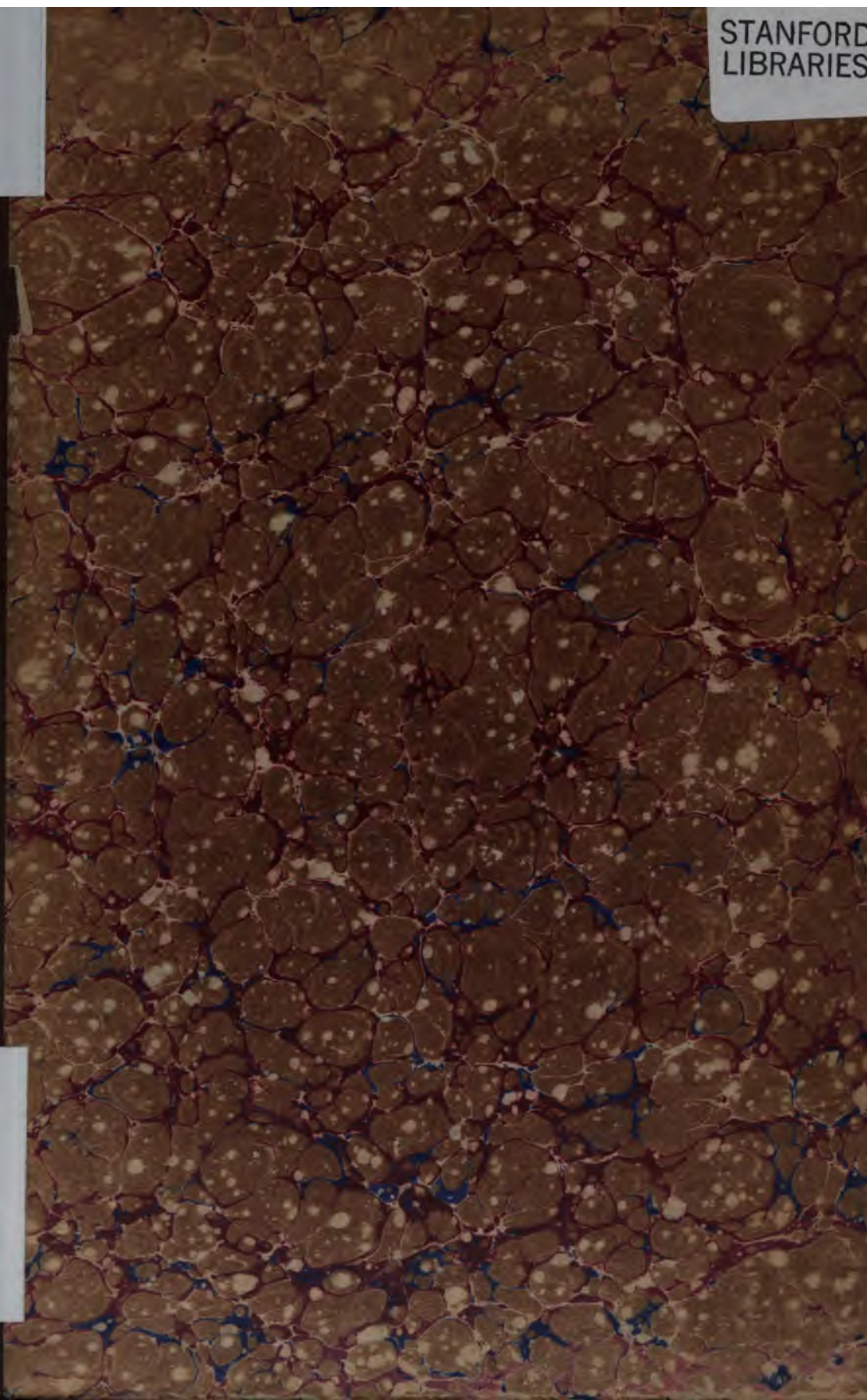
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### EDWARD LIVINGSTON YOUMANS THE MAN AND HIS WORK

BY

PROF. JOHN FISKE

AUTHOR OF "COSMIC PHILOSOPHY," "EXCURSIONS OF AN EVOLUTIONIST,"  
"THE DESTINY OF MAN," ETC.

*The eye reads omens where it goes,  
And speaks all languages the rose;  
And, striving to be man, the worm  
Mounts through all the spires of form.*

—NATURE, L, 7.

THE fossil strata show us that Nature began with rudimental forms, and rose to the more complex as fast as the earth was fit for their dwelling-place; and that the lower perish as the higher appear. Very few of our race can be said to be yet finished men. We still carry sticking to us some remains of the preceding inferior quadruped organization. . . . The age of the quadruped is to go out, — the age of the brain and of the heart is to come in. And if one shall read the future of the race hinted in the organic effort of Nature to mount and mellorate, and the corresponding impulse to the Better in the human being, we shall dare affirm that there is nothing he will not overcome and convert, until at last culture shall absorb the chaos and gehenna. He will convert the Furies into Muses and the bells into benefit. — *Culture*.

—RALPH WALDO EMERSON.

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XVII.

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# EDWARD LIVINGSTON YOUMANS

## THE MAN AND HIS WORK

BY

JOHN FISCHE

AUTHOR OF "COSMIC PHILOSOPHY," "EXCURSIONS OF AN EVOLUTIONIST,"  
"THE DESTINY OF MAN," ETC.

THE  
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**COLLATERAL READINGS SUGGESTED.**

"Biographical sketch of E. L. Youmans," in *Popular Science Monthly*, March, 1887; Article, "Edward L. Youmans," in "Appleton's Cyclopædia of Biography."

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## EDWARD LIVINGSTON YOUMANS:

### THE MAN AND HIS WORK.

IN one of the most beautiful of all the shining pages of his "History of the Spanish Conquest in America," Sir Arthur Helps describes the way in which, through "some fitness of the season, whether in great scientific discoveries or in the breaking into light of some great moral cause, the same processes are going on in many minds, and it seems as if they communicated with each other invisibly. We may imagine that all good powers aid the 'new light,' and brave and wise thoughts about it float aloft in the atmosphere of thought as downy seeds are borne over the fruitful face of the earth" (vol. iii., page 113). The thinker who elaborates a new system of philosophy deeper and more comprehensive than any yet known to mankind, though he may work in solitude, nevertheless does not work alone. The very fact which makes his great scheme of thought a success and not a failure is the fact that it puts into definite and coherent shape the ideas which many people are more or less vaguely and loosely entertaining, and that it carries to a grand and triumphant conclusion processes of reasoning in which many persons have already begun taking the earlier steps. This community in mental trend between the immortal discoverer and many of the brightest contemporary minds, far from diminishing the originality of his work, constitutes the feature of it which makes it a permanent acquisition for mankind, and distinguishes it from the eccentric philosophies which now and then come up to startle the world for a while, and are presently discarded and forgotten. The history of modern physics—as in the case of the correlation of forces and the undulatory theory of light—furnishes us with many instances of wise thoughts floating like downy seeds in the atmosphere until the moment has come for them to take root. And so it has

\* An Address before the Brooklyn Ethical Association, March 23, 1890. Reprinted from *The Popular Science Monthly*, May, 1890, by permission of Messrs. D. Appleton and Company.

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been with the greatest achievement of modern thinking—the doctrine of Evolution. Students and investigators in all departments, alike in the physical and in the historical sciences, were fairly driven by the nature of the phenomena before them into some hypothesis, more or less vague, of gradual and orderly change or development. The world was ready and waiting for Herbert Spencer's mighty work when it came, and it was for that reason that it was so quickly triumphant over the old order of thought. The victory has been so thorough, swift, and decisive that it will take another generation to narrate the story of it so as to do it full justice. Meanwhile, people's minds are apt to be somewhat dazed with the rapidity and wholesale character of the change; and nothing is more common than to see them adopting Mr. Spencer's ideas without recognizing them as his or knowing whence they got them. As fast as Mr. Spencer could set forth his generalizations they were taken hold of here and there by special workers, each in his own department, and utilized therein. His general system was at once seized, assimilated, and set forth with new illustrations by serious thinkers who were already groping in the regions of abstruse thought which the master's vision pierced so clearly. And thus the doctrine of Evolution has come to be inseparably interfused with the whole mass of thinking in our day and generation. I do not mean to imply that people commonly entertain very clear ideas about it, for clear ideas are not altogether common. I suspect that a good many people would hesitate if asked to state exactly what Newton's law of gravitation is.

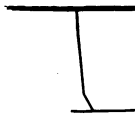
Among the men in America whose minds, between thirty and forty years ago, were feeling their way toward some such unified conception of nature as Mr. Spencer was about to set forth in all its dazzling glory—among the men who were thus prepared to grasp the doctrine of Evolution at once and expound it with fresh illustrations—the first in the field was the man to whose memory we have met here this evening to pay a brief word of tribute. It is but a little while since that noble face was here with us and the tones of that kindly voice were fraught with good cheer for us. To most of you, I presume, the man Edward Livingston Youmans is still a familiar presence. There must be many here this evening who listened to the tidings of his death two years ago with a sense of personal bereavement. No one who knew him is likely ever to forget him. But for those who remember distinctly the man it may not be



superfluous to recount the principal incidents of his life and work. It is desirable that the story should be set forth concisely, so as to be remembered; for the work was like the man, unselfish and unobtrusive, and in the hurry and complication of modern life such work is liable to be lost from sight, so that people profit by it without knowing that such work was ever done. So genuinely modest, so utterly destitute of self-regarding impulses was our friend, that I believe it would be quite like him to chide us for thus drawing public attention to him, as he would think, with too much emphasis. But such mild reproof it is right that we should disregard; for the memory of a life so beautiful and useful is a precious possession of which mankind ought not to be deprived.

EDWARD LIVINGSTON YOUMANS was born in the town of Coeymans, Albany County, N. Y., on the 3d of June, 1821. From his father and mother, both of whom survived him, he inherited strong traits of character as well as an immense fund of vital energy, such that the failure of health a few years ago seemed (to me, at least) surprising. His father, Vincent Youmans, was a man of independent character, strong convictions, and perfect moral courage, with a quick and ready tongue, in the use of which earnestness and frankness perhaps sometimes prevailed over prudence. The mother, Catherine Scofield, was notable for balance of judgment, prudence, and tact. The mother's grandfather was Irish; and, while I very much doubt the soundness of the generalizations we are so prone to make about race characteristics, I cannot but feel that for the impulsive—one had almost said explosive—warmth of sympathy, the enchanting grace and vivacity of manner, in Edward Youmans, this strain of Irish blood may have been to some extent accountable. Both father and mother belonged to the old Puritan stock of New England, and the father's ancestry was doubtless purely English. Nothing could be more honorably or characteristically English than the name. In the old feudal society the *yeoman*, like the *franklin*, was the small freeholder, owning a modest estate yet holding it by no servile tenure, a man of the common people yet no churl, a member of the state who "knew his rights and knowing dared maintain." Few indeed were the nooks and corners outside of merry England where such men flourished as the yeomen and franklins who founded democratic New England. It has often been remarked how the most illustrious of Franklins exemplified the typical

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virtues of his class. There was much that was similar in the temperament and disposition of Edward Youmans—the sagacity and penetration, the broad common sense, the earnest purpose veiled but not hidden by the blithe humor, the devotion to ends of wide practical value, the habit of making in the best sense the most out of life.

When Edward was but six months old, his parents moved to Greenfield, near Saratoga Springs. With a comfortable house and three acres of land, his father kept a wagon-shop and smithy. In those days, while it was hard work to wring a subsistence out of the soil or to prosper upon any of the vocations which rural life permitted, there was doubtless more independence of character and real thriftiness than in our time, when cities and tariffs have so sapped the strength of the farming country. In the family of Vincent Youmans, though rigid economy was practised, books were reckoned to a certain extent among the necessities of life, and the house was one in which neighbors were fond of gathering to discuss questions of politics or theology, social reform or improvements in agriculture. On all such questions Vincent Youmans was apt to have ideas of his own; he talked with enthusiasm, and was also ready to listen; and he evidently supplied an intellectual stimulus to the whole community. For a boy of bright and inquisitive mind, listening to such talk is no mean source of education. It often goes much further than the reading of books. From an early age Edward Youmans seems to have appropriated all such means of instruction. He had that insatiable thirst for knowledge which is one of God's best gifts to man; for he who is born with this appetite must needs be grievously ill-made in other respects if it does not constrain him to lead a happy and useful life.

After ten years at Greenfield the family moved to a farm at Milton, some two miles distant. Until his sixteenth year Edward helped his father at farm-work in the Summer and attended the district school in Winter. It was his good fortune for some time to fall into the hands of a teacher who had a genius for teaching—a man who in those days of rote-learning did not care to have things learned by heart, but sought to stimulate the thinking powers of his pupils, and who in that age of canes and ferules never found it necessary to use such means of discipline, because the fear of displeasing him was of itself all-sufficient. Experience of the methods of such a man was enough to sharpen one's disgust for the excessive mechanism, the





rigid and stupid manner of teaching, which characterize the ordinary school. In after years Youmans used to say that "Uncle Good"—as this admirable pedagogue was called—first taught him what his mind was for. Through intercourse and training of this sort he learned to doubt, to test the soundness of opinions, to make original inquiries, and to find and follow clews.

But even the best of teachers can effect but little unless he finds a mind ready of itself to take the initiative. It is doubtful if men of eminent ability are ever made so by schooling. The school offers opportunities, but in such men the tendency to the initiative is so strong that if opportunities are not offered they will somehow contrive to create them. When Edward Youmans was about thirteen years old he persuaded his father to buy him a copy of Comstock's *Natural Philosophy*. This book he studied at home by himself, and repeated many of the experiments with apparatus of his own contriving. When he made a centrifugal water-wheel, and explained to the men and boys of the neighborhood the principle of its revolution in a direction opposite to that of the stream which moved it, we may regard it as his earliest attempt at giving scientific lectures. It was natural that one who had become interested in physics should wish to study chemistry. The teacher (who was not "Uncle Good") had never so much as laid eyes on a text-book of chemistry; but Edward was not to be daunted by such trifles. A copy of Comstock's manual was procured, another pupil was found willing to join in the study, and this class of two proceeded to learn what they could from reading the book, while the teacher asked them the printed questions—those questions the mere existence of which in text-books is apt to show what a low view publishers take of the average intelligence of teachers! It was not a very hopeful way of studying such a subject as chemistry; but doubtless the time was not wasted, and the foundations for a future knowledge of chemistry were laid. The experience of farm-work which accompanied these studies explains the interest which in later years Mr. Youmans felt in agricultural chemistry. He came to realize how crude and primitive are our methods of making the earth yield its produce, and it was his opinion that, when men have once learned how to conduct agriculture upon sound scientific principles, farming will become at once the most wholesome and the most attractive form of human industry.

Along with the elementary studies in science there went a great deal of miscellaneous reading, mostly, it would appear, of good solid books. Apparently there was at that time no study of languages, ancient or modern. At the age of seventeen the young man had shown so much promise that it was decided he should study law, and he had already entered upon a more extensive course of preparation in an academy in Saratoga County when the event occurred which changed the whole course of his life. He had been naturally gifted with keen and accurate vision, was a good sportsman and an excellent shot with a rifle, but at about the age of thirteen there had come an attack of ophthalmia which left the eyes weak and sensitive. Perpetual reading probably increased the difficulty and hindered complete recovery. At the age of seventeen violent inflammation set in, the sight in one eye was completely lost, while in the other it grew so dim as to be of little avail. Sometimes he would be just able to find his way about the streets, at other times the blindness was almost total, and this state of things lasted for nearly thirteen years.

This dreadful calamity seemed to make it impossible to continue any systematic course of study, and the outlook for satisfactory work of any sort was extremely discouraging. The first necessity was medical assistance, and in quest of this Mr. Youmans came in the autumn of 1839 to New York, where for the most part he spent the remainder of his life. Until 1851 he was under the care of an oculist. Under such circumstances, if a man of eager energy and boundless intellectual craving were to be overwhelmed with despondency, we could not call it strange. If he were to become dependent upon friends for the means of support, it would be ungracious if not unjust to blame him. But Edward Youmans was not made of the stuff that acquiesces in defeat. He rose superior to calamity, he won the means of livelihood, and in darkness entered upon the path to an enviable fame. At first he had to resign himself to spending weary weeks over tasks that with sound eye-sight could have been dispatched in as many days. He invented some kind of writing-machine which held his paper firmly and enabled his pen to follow straight lines at proper distances apart. Long practice of this sort gave his handwriting a peculiar character which it retained in later years. When I first saw it in 1863 it seemed almost undecipherable; but that was far from being the case, and, after I had grown used to it, I found it but little less legible than the



most beautiful chirography. The strokes, gnarled and jagged as they were, had a method in their madness, and every pithy sentence went straight as an arrow to its mark.

While conquering these physical obstacles Mr. Youmans began writing for the press, and gradually entered into relations with leading newspapers which became more and more important and useful as years went on. He became acquainted with Horace Greeley, William Henry Channing, and other gentlemen who were interested in social reforms. His sympathies were strongly enlisted with the little party of abolitionists, then held in such scornful disfavor by all other parties. He was also interested in the party of temperance, which, as he and others were afterward to learn, compounded for its essential uprightness of purpose by indulging in very gross intemperance of speech and action. The disinterestedness which always characterized him was illustrated by his writing many articles for a temperance paper which could not afford to pay its contributors, although he was struggling with such disadvantages in earning his own livelihood and carrying on his scientific studies. Those were days when leading reformers believed that by some cunningly contrived alteration of social arrangements our human nature, with all its inheritance from countless ages of brutality, can somehow be made over all in a moment, just as one would go to work with masons and carpenters and revamp a house. There are many good people who still labor under such a delusion.

Though Mr. Youmans was brought into frequent contact with reformers of this sort, it does not seem to me that his mind was ever deeply impressed with such ways of thinking. Science is teaching us that the method of Evolution is that mill of God, of which we have heard, which, while it grinds with infinite efficacy, yet grinds with wearisome slowness. It was Mr. Darwin's discovery of natural selection which first brought this truth home to us; but Sir Charles Lyell had in 1830 shown how enormous effects are wrought by the cumulative action of slight and unobtrusive causes, and this had much to do with turning men's minds toward some conception of Evolution. It was about 1847 that Mr. Youmans was deeply interested in the work of geologists, as well as in the nebular theory, to which recent discoveries were adding fresh confirmation. Some time before this he had read that famous book, "Vestiges of Creation," and, although Prof. Agassiz truly declared that it was an unscientific book crammed with antiquated and

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exploded fancies, I suspect that Mr. Youmans felt that amid all the chaff there was a very sound and sturdy kernel of truth.

Among the books which Mr. Youmans projected at this time, the first was a compendious history of progress in discovery and invention; but, after he had made extensive preparations, a book was published so similar in scope and treatment that he abandoned the undertaking. Another work was a treatise on arithmetic, on a new and philosophical plan; but, when this was approaching completion, he again found himself anticipated, this time by the book of Horace Mann. This was discouraging enough, but a third venture resulted in a brilliant success. We have observed the eagerness with which, as a school-boy, Mr. Youmans entered upon the study of chemistry. His interest in this science grew with years, and he devoted himself to it so far as was practicable. For a blind man to carry on the study of a science which is pre-eminently one of observation and experiment might seem hopeless. It was at any rate absolutely necessary to see with the eyes of others if not with his own. Here the assistance rendered by his sister was invaluable. During most of this period she served as amanuensis and reader for him. But, more than this, she kept up for some time a course of laboratory work, the results of which were minutely described to her brother and discussed with him in the evenings. The lectures of Dr. John William Draper on chemistry were also thoroughly discussed and pondered.

The conditions under which Mr. Youmans worked made it necessary for him to consider every point with the extreme deliberation involved in framing distinct mental images of things and processes which he could not watch with the eye. It was hard discipline, but he doubtless profited from it. Nature had endowed him with an unusually clear head, but this enforced method must have made it still clearer. One of the most notable qualities of his mind was the absolute luminousness with which he saw things and the relations among things. It was this quality that made him so successful as an expounder of scientific truths. In the course of his pondering over chemical facts which he was obliged to take at second hand, it occurred to him that most of the pupils in common schools who studied chemistry were practically no better off. It was easy enough for schools to buy text-books, but difficult for them to provide laboratories and apparatus; and it was much



easier withal to find teachers who could ask questions out of a book than those who could use apparatus if provided. It was customary, therefore, to learn chemistry by rote; or, in other words, pupils' heads were crammed with unintelligible statements about things with queer names—such as manganese or tellurium—which they had never seen, and would not know if they were to see them. It occurred to Mr. Youmans that, if visible processes could not be brought before pupils, at any rate the fundamental conceptions of chemistry might be made clear by means of diagrams. He began devising diagrams in different colors, to illustrate the diversity in the atomic weights of the principal elements, and the composition of the more familiar compounds. At length, by uniting his diagrams, he obtained a comprehensive chart exhibiting the outlines of the whole scheme of chemical combination according to the binary or dualist theory then in vogue. This chart, when published, was a great success. It not only facilitated the acquirement of clear ideas, but it was suggestive of new ideas. It proved very popular, and kept the field until the binary theory was overthrown by the modern doctrine of substitution, which does not lend itself so readily to graphic treatment.

The success of the chemical chart led to the writing of a text-book of chemistry. This laborious work was completed in 1851, when Mr. Youmans was thirty years old. Prof. Silliman was then regarded as one of our foremost authorities in chemistry, but it was at once remarked of the new book that it showed quite as thorough a mastery of the whole subject of chemical combination as Silliman's. It was a text-book of a kind far less common then than now. There was nothing dry about it. The subject was presented with beautiful clearness, in a most attractive style. There was a firm grasp of the philosophical principles underlying chemical phenomena, and the meaning and functions of the science were set forth in such a way as to charm the student and make him wish for more. The book had an immediate and signal success; in after-years it was twice rewritten by the author, to accommodate it to the rapid advances made by the science, and it is still one of our best text-books of chemistry. It has had a sale of about one hundred and fifty thousand copies.

The publication of this book at once established its author's reputation as a scientific writer, and in another way it marked an era in his life. The long, distressing period of darkness now came to an end. Sight was so far

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recovered in one eye that it became possible to go about freely, to read, to recognize friends, to travel, and make much of life. I am told that his face had acquired an expression characteristic of the blind, but that expression was afterward completely lost. When I knew him it would never have occurred to me that his sight was imperfect, except perhaps as regards length of range.

Mr. Youmans's career as a scientific lecturer now began. His first lecture was the beginning of a series on the relations of organic life to the atmosphere. It was illustrated with chemical apparatus, and was given in a private room in New York to an audience which filled the room. Probably no lecturer ever faced his first audience without some trepidation, and Mr. Youmans had not the main-stay and refuge afforded by a manuscript, for his sight was never good enough to make such an aid available for his lectures. At first the right words were slow in finding their way to those ready lips, and his friends were beginning to grow anxious, when all at once a happy accident broke the spell. He was remarking upon the characteristic instability of nitrogen, and pointing to a jar of that gas on the table before him, when some fidgety movement of his knocked the jar off the table. He improved the occasion with one of his quaint *bons mots*, and, as there is nothing that greases the wheels of life like a laugh, the lecture went on to a successful close.

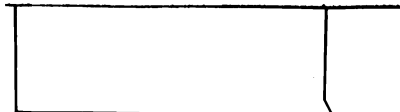
This was the beginning of a busy career of seventeen years of lecturing, ending in 1868; and I believe it is safe to say that few things were done in all those years of more vital and lasting benefit to the American people than this broadcast sowing of the seeds of scientific thought in the lectures of Edward Youmans. They came just at the time when the world was ripe for the doctrine of Evolution, when all the wondrous significance of the trend of scientific discovery since Newton's time was beginning to burst upon men's minds. The work of Lyell in geology, followed at length in 1859 by the Darwinian theory; the doctrine of the correlation of forces and the consequent unity of nature; the extension and reformation of chemical theory; the simultaneous advance made in sociological inquiry, and in the conception of the true aims and proper methods of education—all this made the period a most fruitful one for the peculiar work of such a teacher as Youmans. The intellectual atmosphere was charged with conceptions of Evolution. Mr. Youmans had arrived at such conceptions

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in the course of his study of the separate lines of scientific speculation which were now about to be summed up and organized by Herbert Spencer into that system of philosophy which marks the highest point to which the progressive intelligence of mankind has yet attained. In the field of scientific generalization upon this great scale, Mr. Youmans was not an originator; but his broadly sympathetic and luminous mind moved on a plane so near to that of the originators that he seized at once upon the grand scheme of thought as it was developed, made it his own, and brought to its interpretation and diffusion such a happy combination of qualities as one seldom meets with. The ordinary popularizer of great and novel truths is a man who comprehends them but partially and illustrates them in a lame and fragmentary way. But it was the peculiarity of Mr. Youmans that, while on the one hand he could grasp the newest scientific thought so surely and firmly that he seemed to have entered into the innermost mind of its author, on the other hand he could speak to the general public in a convincing and stimulating way that had no parallel. This was the secret of his power, and there can be no question that his influence in educating the American people to receive the doctrine of Evolution was great and wide-spread.

The years when Mr. Youmans was traveling and lecturing were the years when the old lyceum system of popular lectures was still in its vigor. The kind of life led by the energetic lecturer in those days was not that of a Sybarite, as may be seen from a passage in one of his letters: "I lectured in Sandusky, and had to get up at five o'clock to reach Elyria; I had had but very little sleep. To get from Elyria to Pittsburg I must take the five o'clock morning train, and the hotel darkey said he would *try* to awaken me. I knew what that meant, and so did not get a single wink of sleep that night. Rode all day to Pittsburg, and had to lecture in the great Academy of Music over foot-lights. . . . The train that left for Zanesville departed at two in the morning. I had been assured a hundred times (for I asked everybody I met) that I would get a sleeping-car to Zanesville, and, when I was already to start, I was informed that *this* morning there was no sleeping-car. By the time I reached here I was pretty completely used up."

Such a fatiguing life, however, has its compensations. It brings the lecturer into friendly contact with the brightest minds among his fellow-countrymen in many and many



places, and enlarges his sphere of influence in a way that is not easy to estimate. Clearly an earnest lecturer, of commanding intelligence and charming manner, with a great subject to teach, must have an opportunity for sowing seeds that will presently ripen in a change of opinion or sentiment, in an altered way of looking at things on the part of whole communities. No lecturer has ever had a better opportunity of this sort than Edward Youmans, and none ever made a better use of his opportunity. His gifts as a talker were of the highest order. The commonest and plainest story, as told by Edward Youmans, had all the breathless interest of the most thrilling romance. Absolutely unconscious of himself, simple, straightforward, and vehement, wrapped up in his subject, the very embodiment of faith and enthusiasm, of heartiness and good cheer, it was delightful to hear him. And when we join with all this his unfailing common sense, his broad and kindly view of men and things, and the delicious humor that kept flashing out in quaint, pithy phrases such as no other man would have thought of, and such as are the despair of anyone trying to remember and quote them, we can seem to imagine what a power he must have been with his lectures.

When such a man goes about for seventeen years, teaching scientific truths for which the world is ripe, we may be sure that his work is great, albeit we have no standard whereby we can exactly measure it. In hundreds of little towns with queer names did this strong personality appear and make its way and leave its effects in the shape of new thoughts, new questions, and enlarged hospitality of mind, among the inhabitants. The results of all this are surely visible to-day. In no part of the English world has Herbert Spencer's philosophy met with such a general and cordial reception as in the United States. This may, no doubt, be largely explained by a reference to general causes; but as it is almost always necessary, along with our general causes, to take into the account some personal influence, so it is in this case. It is safe to say that among the agencies which during the past fifty years have so remarkably broadened the mind of the American people, very few have been more potent than the gentle and subtle but pervasive work done by Edward Youmans with his lectures, and to this has been largely due the hospitable reception of Herbert Spencer's ideas.

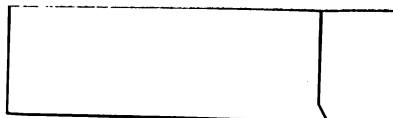
It was in 1856 that Mr. Youmans fell in with a review of "Spencer's Principles of Psychology," by Dr. Morell, in

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*The Medico-Chirurgical Review.* This review impressed him so deeply that he at once sent to London for a copy of the book, which had been published in the preceding year. It will be observed that this was four years before the Darwinian theory was announced in the first edition of the "Origin of Species." Toward the end of that book Mr. Darwin looked forward to a distant future when the conception of gradual development might be applied to the phenomena of conscious intelligence. He had not then learned of the existence of such a book as the "Principles of Psychology." In later editions he was obliged to modify his statement and confess that, instead of looking so far forward, he had better have looked about him. I have more than once heard Mr. Darwin laugh merrily over this, at his own expense.

After struggling for a while with the weighty problems of this book—the most profound treatise upon mental phenomena that any human mind has ever produced—Mr. Youmans saw that the theory expounded in it was a long stride in the direction of a general theory of Evolution. His interest in this subject received a new and fresh stimulus. He read "Social Statics," and began to recognize Mr. Spencer's hand in the anonymous articles in the quarterlies in which he was then announcing and illustrating various portions or segments of his newly discovered law of Evolution. One evening in February, 1860, as Mr. Youmans was calling at a friend's house in Brooklyn, the Rev. Samuel Johnson, of Salem, handed him the famous prospectus of the great series of philosophical works which Mr. Spencer proposed to issue by subscription. Mr. Johnson had obtained this from Edward Silsbee, who was one of the very first Americans to become interested in Spencer. The very next day Mr. Youmans wrote a letter to Mr. Spencer, offering his aid in procuring American subscriptions and otherwise aiding in every possible way the progress of the enterprise. With this letter and Mr. Spencer's cordial reply began the life-long friendship between the two men. It was in that same month that I first became aware of Mr. Spencer's existence, through a single paragraph quoted from him by Mr. Lewes, and in that paragraph there was immense fascination. I had been steeping myself in the literature of modern philosophy, starting with Bacon and Descartes, and was then studying Comte's "Philosophie Positive," which interested me as suggesting that the special doctrines of the several sciences might be organized into a general



body of doctrine of universal significance. Comte's work was crude and often wildly absurd, but there was much in it that was very suggestive. In May, 1860, in the Old Corner Bookstore in Boston, I fell upon a copy of that same prospectus of Mr. Spencer's works, and read it with exulting delight, for clearly there was to be such an organization of scientific doctrine as the world was waiting for. It appeared that there was some talk of Ticknor & Fields undertaking to conduct the series in case subscriptions enough should be received. Mr. Spencer preferred to have his works appear in Boston; but when in the course of 1860 his book on "Education" was offered to Ticknor & Fields, they declined to publish it, which was, of course, a grave mistake from the business point of view. Mr. Youmans, however, was not sorry for this, for it gave him the opportunity to place Mr. Spencer's books where he could do most to forward their success.

Some years before, during his blindness, his sister had led him one day into the store of Messrs. D. Appleton & Co. in quest of a book, and Mr. William H. Appleton had become warmly interested in him. I believe the firm now look back to this chance visit as one of the most auspicious events in their annals. He became by degrees a kind of adviser as regarded matters of publication, and it was largely through his far-sighted advice that the Appletons entered upon the publication of such books as those of Buckle, Darwin, Huxley, Tyndall, Haeckel, and others of like character, always paying a royalty to the authors, the same as to American authors, in spite of the absence of an international copyright law. As publishers of books of this sort the Appletons have come to be pre-eminent. It is obvious enough nowadays that such books are profitable from a business point of view. But thirty years and more ago this was by no means obvious. We were very provincial. Reprints of English books, translations from French and German, were sadly behind the times. In the Connecticut town where I lived people would begin to wake up to the existence of some great European book or system of thought after it had been before the world anywhere from a dozen to fifty years. In those days, therefore, it required some boldness to undertake the reprinting of new scientific books, and none have recognized more freely than the Appletons the importance of the part played by Mr. Youmans in this matter. His work as adviser to a great publishing house and his work as lecturer re-enforced each

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other, and thus his capacity for usefulness was much increased.

When Mr. Spencer's book on "Education" failed to find favor in Boston, the Appletons took it, and thus presently secured the management of the philosophical series. This brought Mr. Youmans into permanent relations with Mr. Spencer and his work. In 1861 Mr. Youmans was married, and in the course of the following year made a journey in Europe with his wife. It was now that he became personally acquainted with Mr. Spencer, and found him quite as interesting and admirable as his books. Friendships were also begun with Huxley and other foremost men of science. From more than one of these men I have heard the warmest expressions of personal affection for Mr. Youmans, and of keen appreciation of the aid that they have obtained in innumerable ways from his intelligent and enthusiastic sympathy. But no one else got so large a measure of this support as Mr. Spencer. As fast as his books were republished, Mr. Youmans wrote reviews of them, and by no means in the usual perfunctory way; his reviews and notices were turned out by the score, and scattered about in the magazines and newspapers where they would do the most good. Whenever he found another writer who could be pressed into the service, he would give him Spencer's books, kindle him with a spark from his own magnificent enthusiasm, and set him to writing for the press. The most indefatigable vender of wares was never more ruthlessly persistent in advertising for lucre's sake than Edward Youmans in preaching in a spirit of the purest disinterestedness the gospel of Evolution. As long as he lived, Mr. Spencer had upon this side of the Atlantic an *alter ego* ever on the alert with vision like that of a hawk for the slightest chance to promote his interests and those of his system of thought.

Among the allies thus elisted at that early time were Mr. George Ripley and Rev. Henry Ward Beecher, both of whom did good service, in their different ways, in awakening public interest in the doctrine of Evolution. In those days of the Civil War it was especially hard to keep up the list of subscribers in an abstruse philosophical publication of apparently interminable length. Mr. Youmans now and then found it needful to make a journey in the interests of the work, and it was on one of these occasions, in Novem-

ber, 1863, that I made his acquaintance. I had already published, in 1861, an article in one of the quarterly reviews in which Mr. Spencer's work was referred to; and another in 1863, in which the law of Evolution was illustrated in connection with certain problems of the science of language. The articles were anonymous, as was then the fashion, and Mr. Youman's curiosity was aroused. There were so few people then who had any conception of what Mr. Spencer's work meant, that they could have been counted on one's fingers. At that time I knew of only three—the late Prof. Gurney, of Harvard; Mr. George Roberts, now an eminent patent lawyer in Boston; and Mr. John Clark, now of the Prang Educational Company. I have since known that there were at least two or three others about Boston, among others, my learned friend the Rev. W. R. Alger, besides several in other parts of the country. When we sometimes ventured to observe that Mr. Spencer's work was as great as Newton's, and that his theory of Evolution was going to remodel human thinking upon all subjects whatever, people used to stare at us and take us for idiots. Any one member of such a small community was easy to find; and I have always dated a new era in my life from the Sunday afternoon when Mr. Youmans came to my room in Cambridge. It was the beginning of a friendship such as hardly comes but once to a man. At that first meeting I knew nothing of him except that he was the author of a text-book of chemistry which I had found interesting, in spite of its having been crammed down my throat by an old-fashioned memorizing teacher who, I am convinced, never really knew so much as the difference between oxygen and antimony. At first it was a matter of breathless interest to talk with a man who had seen Herbert Spencer. But one of the immediate results of this interview was the beginning of my own correspondence with Mr. Spencer, which led to manifold results. And from that time forth it always seemed as if, whenever any of the good or lovely things of life came to my lot, somehow or other Edward Youmans was either the cause of it or at any rate intimately concerned with it. The sphere of his unselfish goodness was so wide and its quality so potent that one could not come into near relations with him without becoming in all manner of unsuspected ways strengthened and enriched.



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In the autumn of 1865 we were dismayed by the announcement that Mr. Spencer would no longer be able to go on issuing his works. In London they were published at his own expense and risk, and those books which now yield a handsome profit did not then pay the cost of making them. By the summer of 1865 there was a balance of £1100 against Mr. Spencer, and his property was too small to admit of his going on and losing at such a rate. As soon as this was known, John Stuart Mill begged to be allowed to assume the entire pecuniary responsibility of continuing the publication; but this, Mr. Spencer, while deeply affected by such noble sympathy, would not hear of. He consented, however, with great reluctance, to the attempt of Huxley and Lubbock, and other friends, to increase artificially the list of subscribers by inducing people to take the work just in order to help support it. But after several months the sudden death of Mr. Spencer's father added something to his means of support, and he thereupon withdrew his consent to this arrangement, and determined to go on publishing as before, and bearing the loss.

But, as soon as the first evil tidings reached America, Mr. Youmans made up his mind that \$5500 must be forthwith raised by subscription, in order to make good the loss already incurred. It is delightful to remember the vigor with which he took hold of this work. The sum of \$7000 was raised and invested in American securities in Mr. Spencer's name. If he did not see fit to accept these securities, they would go without an owner. The best Waltham watch that could be procured was presented to Mr. Spencer by his American friends; a letter, worded with rare delicacy and tact, was written by the late Robert Minturn; and Mr. Youmans sailed for England to convey the letter and the watch to Mr. Spencer. It was a charming scene on a summer day in an English garden when the great philosopher was apprised of what had been done. It was so skillfully managed that he could not refuse the tribute without seeming churlish. He therefore accepted it, and applied it to extending his researches in descriptive sociology.

Of the many visits which Mr. Youmans made to England, now and then extending them to the Continent, one of the most important was in 1871, for the purpose of establishing

the International Scientific Series. This was a favorite scheme of Mr. Youmans. He realized that popular scientific books, adapted to the general reader, are apt to be written by third-rate men who do not well understand their subject; they are apt to be dry or superficial or both. No one can write so good a popular book as the master of a subject, if he only has a fair gift of expressing himself and keeps in mind the public for which he is writing. The master knows what to tell and what to omit, and can thus tell much in a short compass and still make it interesting; moreover, he avoids the inaccuracies which are sure to occur in second-hand work. Masters of subjects are apt, however, to be too much occupied with original research to write popular books. It was Mr. Youman's plan to induce the leading men of science in Europe and America to contribute small volumes on their special subjects to a series to be published simultaneously in several countries and languages. Furthermore, by special contract with publishing houses of high reputation, the author was to receive the ordinary royalty on every copy of his book sold in every one of the countries in question, thus anticipating international copyright upon a very wide scale, and giving the author a much more adequate compensation for his labor. To put this scheme into operation was a task of great difficulty, so many conflicting interests had to be considered. Mr. Youmans brilliant success is attested by that noble series of more than fifty volumes, on all sorts of scientific subjects, written by men of real eminence, and published in England, France, Italy, Germany, and Russia, as well as in the United States.

A word is all that can be spared for other parts of our friend's work, which deserve many words and those carefully considered. His book on "Household Science" is not the usual collection of scrappy comment, recipe, and apothegm, but a valuable scientific treatise on heat, light, air, and food in their relations to every-day life. In his "Correlation of Physical Forces" he brings together the epoch-making essays of the men who have successively established that doctrine, introducing them with an essay of his own in which its history and its philosophical implications are set forth in a masterly manner. In his book on the "Culture demanded by Modern Life" we have a similar collection of essays with a similar excellent



original discussion, showing the need for wider and later training in science, and protesting against the excess of time and energy that is spent in classical education where it is merely the following of an old tradition.

As a crown to all this useful work Mr. Youmans established, in 1872, *The Popular Science Monthly*, which has unquestionably been of high educational value to the general public. It was not the aim of this magazine to give an account of every theory expounded, every fact observed, every discovery made from year to year, whether significant or insignificant. The mind of the people is not educated by dumping a great, unshapely mass of facts into it. It needs to be stimulated rather than crammed. Education in science should lead one to think for one's self. The scientific magazine, therefore, should present articles from all quarters that deal with the essential conceptions of science or discuss problems of real theoretical or practical interest, no matter whether every particular asteroid or the last new species of barnacle receives full attention or not. *The Popular Science Monthly* has now been with us eighteen years; its character has always been of the highest, and it must have exerted an excellent influence not only as a diffuser of valuable knowledge, but in training its readers to scientific habits of thought in so far as mere reading can contribute to such a result.

In concluding our survey of this useful and noble life, what impresses us most, I think, is the broad, democratic spirit and the absolute unselfishness which it reveals at every moment and in every act. To Edward Youmans the imperative need for educating the great mass of the people so as to use their mental powers to the best advantage came home as a living, ever-present fact. He saw all that it meant and means in the raising of mankind to a higher level of thought and action than that upon which they now live. To this end he consecrated himself with unalloyed devotion; and we who mourn his loss look back upon his noble career with a sense of victory, knowing how the good that such a man does lives after him and can never die.



## ABSTRACT OF THE DISCUSSION.

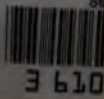
MR. DANIEL GREENLEAF THOMPSON :—

It is my purpose only to supplement the address of the speaker of the evening by a few desultory remarks, founded partly upon personal acquaintance and partly upon facts given to me by members of Prof. Youmans' own family and by friends. Prof. Youmans was a well-known figure in our New York community, a member of leading clubs, a social factor and an integral part of the intellectual life of the city. He was an excellent conversationalist, and when he joined a group he speedily made himself heard and attracted attention by his emphatic manner, his incisive remarks and his droll, unique expressions. One was quite likely to hear something about Evolution from him, and if anybody was rash enough to dwell upon the importance of the Classics in education he would be pretty sure to draw in his head like a turtle's into its shell after he had given Prof. Youmans a three-minutes' chance. He was full of anecdote, and had a store of reminiscences of his acquaintance with many eminent men of England and America, which, if they had been preserved, would have been of great interest and value.

The qualities that made him so good a conversationalist contributed to secure his success as a lecturer. He pleased his audiences, but did not always suit the fancy of the local clergymen, who in some places not only assumed to represent the Almighty in directing conduct, but also claimed to have delegated to them His omniscient infallibility. In one case this earnest disciple of science was brought into competition with a series of revival meetings. This was at Freeport, Ill., in January, 1868. I shall venture to read his own description of what occurred from a letter here, which the kindness of Mrs. Youmans permits me to use :

"There was a 'Protracted Meeting' in full blast in every church in town except the Episcopalian, and a general feeling of pious Christian rage at my appearance. The Presbyterian clergyman alone, a cold-blooded but highly intellectual man, who had been driven into the spiritual movement sheerly against his will, by pure competition, appointed his religious meetings at half-past six o'clock, to be out at eight, so as to attend the lecture. My first lecture, therefore, was made to about a hundred stragglers from prayer-meetings. I, of course, assumed the antiquity of the earth in that lecture, and that was enough. It got abroad the next day and reverberated through the town that I was an open and avowed infidel. There was a deuce of a time. I was called upon by individuals, and offensively catechised as to what I believed, and questions were written by clergymen and sent in to be promptly answered. The next night it was hardly a trifle better. The gentlemen who had the thing in charge, seeing how things were going, and determined not to be baffled, crowded the





house the last two nights with the pupils of the schools, let in free—a capital arrangement, as I would always much rather talk to them than to old folks. I gave them a piece of my mind (in a dignified way), at the close of the last lecture, and it was a successful hit. I turned the tables, and showed that it was those who betrayed their skepticism as to the safe effects of demonstrated truth who were the real infidels—‘infidels,’ *unfaithful*. At the close of the lecture a certain Mr. Mitchell, member of the Presbyterian church and president of the bank, a splendid man, the perfect image of Uncle Good, came up to the platform and collected the committee together. He then said: ‘I will myself stand the expense of an immediate repetition of this course free, if Prof. Youmans will stay and deliver it.’ They lost \$300 on the course. The price was \$400 for my series, but they quietly, without explanation, handed me \$300—\$90 apiece—which, of course, I accepted without objection.”

The fact that Prof. Youmans was a good lecturer is attested by the circumstance that he could speak two hours without wearying the audience. I will read from one more letter, which records the speaker's own estimate that he had reached the summit of his lecturing career. He writes from Fairibault:

“This is a little place of a thousand people, but they gave me a fine house last night, and I in turn gave them (pardon me) a fine lecture, ‘The Rise and Influence of Modern Science.’ I happened to be in the best of trim, and they happened to have the most agreeable place to speak in. (I tumbled off the platform twice, and we all had the jolliest kind of a time.) I spoke two hours, and a committee of gentlemen, among whom was the Chief Justice of this State and the Attorney-General, called on me this morning with enthusiastic assurances that the audience would have gladly staid two hours longer. It was the best and most telling lecture I ever gave in my life upon any subject. They gave me \$100, with a profusion of thanks, and urged me very hard to stop and lecture again on my way back, which is now impossible. I am all right here for the future, at \$100 a night—the top of my lecturing ambition.”

Prof. Youmans was a broadly educated man. It would be a mistake to suppose that his advocacy of scientific studies as against classical in the schools arose from deficiency in classical education. On the contrary, his sister tells us, in her biographical sketch in the *Popular Science Monthly*, how with him classical studies preceded his scientific training, and inclined his mind first toward language. After a classical education he became satisfied that more science was needed. Indeed, it was Mr. Spencer's treatise on “Education” which first influenced his mind toward Spencerian philosophy. He had asked himself the question of that treatise, “What knowledge is of most worth?” And there he found his answer; in that answer he constructed his own work as an educator—knowledge, scientific knowledge, first in all things.

But though first a scientist, Prof. Youmans was not forgetful of other branches of literature than the scientific. He was fond of poetry. He was not a novel-reader, nor did he especially

enjoy pulpit sermons. Anything making for practical value was precious in his eyes; the useless he endeavored to eliminate. Prof. Youmans was too much of an enthusiast to become a very systematic worker. He was irregular in his labors, working all night if need be, not thinking of economy of resources. He was not careful to take sufficient exercise, being rather indolent as regards physical exertion. Yet he sometimes chopped wood, like Mr. Gladstone; but if anybody had asked him to saw it I think he would have said, "Go to!" He liked good living, but was not a drinking-man, save that he was very intemperate with ice-water. He commended himself to his wife when he married her, at his age of forty, by the fact that he never used tobacco; but he fell from this grace afterward, and became a smoker; I suppose at first only when away from her, because in his absence from her society he felt the evil which he had not known before, and endeavored to soothe his mind as best he could.

Not to weary you further, if I were to characterize Prof. Youmans' work it would be to emphasize his service as an educator. This was the purpose of his lecturing, his works, his establishment of *The Popular Science Monthly*. He wanted first to know the truth, and then, he believed, if the truth could only be applied it would make men free. So he sought to popularize knowledge and make it assimilable to men's minds. In this I think he achieved a very marked success, and made a very decided impression upon American intellectual life. His own books had this effect, and the establishment and continuance of *The Popular Science Monthly* have contributed powerfully to the same result. The work of him who seizes upon, utilizes, adapts and extends the discovery is scarcely, if at all, less important than that of the original discoverer. If it be an object to give a force and efficiency to truth that shall insure its permanent hold upon the human mind, then honor is due to him who makes it forceful. However far scientific progress has gone in America, to whatever extent empirical ignorance has been superseded, in whatever degree superstitions have lost their force—the life-labors of Prof. Youmans must be counted as a potent factor in the change. He saw his mission and he fulfilled it well. He never despised art, but he believed in science as of first importance, and whether science or art be considered, he insisted on its practical interests. He believed that

Not to know at large of things remote  
From us, obscure and subtle, but to know  
That which before us lies in daily life,  
Is the prime wisdom; what is more is fume,  
An emptiness or loud impertinence,  
And renders us in things that most concern  
Unpractised, unprepared and still to seek.

PROFESSOR FRANKLIN W. HOOPER:—

I rise to acknowledge the debt of gratitude which I personally owe to the late Prof. Youmans. More than twenty years ago, when occupying the position of janitor in a Western College—a position which gave me access to the College Library—I came across a book the reading of which marked an era in my life. The title of the book was, "The Culture Demanded by Modern Life,"





and its author or collaborator was Mr. Youmans. I read it eagerly, especially the chapter which was written by Mr. Youmans, and it strongly influenced my mind in the direction of scientific studies. Either on the advertising pages of the book, or elsewhere, about the same time, I saw a notice of Herbert Spencer's book on "Education"—a book which it is hardly too much to say has influenced, more than any other of the present century, the character of our educational methods.

In subsequent years, after I came to Brooklyn, I frequently had occasion to meet Prof. Youmans, and consult with him about the text-books in use in our colleges and schools. The impression produced by personal acquaintance strengthened the judgment which I had formed from reading his books. His influence more than any other aroused in my mind broad ideas of the Universe, and started me out as an evolutionist.

The leading characteristic in Prof. Youmans' character, as it seems to me, was his hatred of pretense and shams. I remember calling on him once to consult him in regard to the compilation of a text-book on zoology. He indignantly, and in the strongest language, denounced the books then in use in the schools, declaring that it was impossible for children to be properly educated by the use of such defective tools.

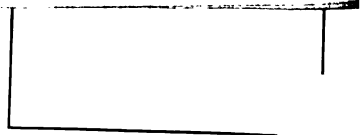
Prof. Youmans, in some of the characteristics of his mind and character, strongly resembled the late Horace Greeley. Both of these men possessed admirable virtues, but both also had some noticeable defects. The defect in Prof. Youmans' character, as it appears to me, was that his mind was not broad enough to include religion in his philosophy. He was a materialist and an agnostic; whereas, in my judgment, the study of science and of Evolution should emphasize the fact that all Nature, the Universe itself, and the mind of man, are but shadows and symbols of an immanent and self-revealing God.

MR. GARRETT P. SERVISS:—

I also desire to recognize my great indebtedness to Prof. Youmans for his books and his popular lectures on scientific subjects, which awakened in my mind an interest in the physical sciences that has never since weakened or grown dim. The most striking characteristic of his character, as it seems to me, was his wonderful faculty for simplifying the abstruse problems of scientific research, making them clear and plain to the most uninstructed mind, and by the charm of his manner awakening the interest and arousing the enthusiasm of his auditors and readers. I cannot believe that this faculty of popularizing science is in truth so rare as it appears to be—though we must admit that few eminent scientific investigators have possessed it in any great degree. In that direction must lie our progress in the future; for in order that the beneficent influence of science may extend its sway over all the earth, *the people* must be instructed.

MR. GEORGE ILES:—

While Prof. Youmans' natural powers of expression were remarkable even in youth, he took pains to improve them by unremitting cultivation. He well knew how much the effectiveness of a thought depends upon clear and telling statement, and he drilled himself carefully in the art of making difficult things



plain. His task of course began in reaching thoroughly clear views as to the themes of his study. For this complete grasp of ideas, and facility in communicating them, he was indebted in no small measure to the circumstances of his early years in New York. Unfortunate as those years were in many ways they were not without their compensations. When he left the eye-infirmary, in his nineteenth year, he went to board at a Mrs. Cook's, whose house was at the corner of Pearl and Hague streets. Most of his fellow-boarders were printers, and their friendship was soon enlisted by his intelligence and vivacity. As opportunity offered they would read to him, and as his choice lay among books of science he had abundant food for reflection when left by himself. Throughout life it was his habit and pleasure to talk over with his friends whatever interested him, so that in those early days he spent a good many hours explaining to the young printers about him something of the facts and principles he had been digesting; thus all unconsciously receiving a capital training for his future work as a scientific expositor. There can be no doubt that, to a man of his impulsive temperament, blindness and solitude compelled a depth of reflection which happier circumstances would have denied. And in teaching lessons so painfully learned to others much less informed than himself he took his first steps in the mastery of an art in which he afterward excelled, — the difficult art of interesting every-day people in science and making its truths simple and clear. As a writer he was his own severest critic in this regard. Articles widely quoted for their apparent spontaneity, articles which might seize the pith of a controversy, or wittily prick some bubble of fallacy, were the products of hard labor. He often re-wrote parts of a manuscript a dozen times, and only surrendered it to the printer when the printer would wait no longer. His introduction to "The Culture Demanded by Modern Life," perhaps his best piece of writing, was pruned, revised and recast so much that at last scarcely a sentence of the original draft remained. When he became editor, the art he had so faithfully practised he commended to others. Here is a specimen letter to a young contributor:—

"NEW YORK, May 17th, 1876.

"My Dear Sir:

"Your article appears in the June number. As I stated to you at first, it is excellent, and will be read by many with appreciation. But when I looked over the proof it occurred to me that it had some faults of presentation, perhaps due to your lack of practice in putting abstract things to common readers. Our scientific readers, of course, will have no trouble in understanding you, and will enjoy your argument, but eight-tenths of the patrons of the *Monthly* will get but a partial comprehension of it. Of course so abstract a topic as "The Mathematics of Evolution" may be expected to require some intellectual force to grasp it, and I am well content with your main exposition. Still, I think some serious and systematic attention on your part to the art and artifice of clear and familiar statement, which will give you access to ordinary minds, is very important. I do not mean for a moment that your writing is obscure, but only that your composition would be improved if you had in your mind's eye a person of

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common intelligence and quite unacquainted with the subject you sought to explain. You would then stop and think by what handling or illustration the view, so clear to you, could be brought into his apprehension. I am speaking from the Popular Science standpoint about a deficiency which marks many of our scientific writers; generally, the deeper and more thorough their science the poorer is their power of exposition. Excuse me for throwing out these suggestions, but with your unusual ability of statement and command of appropriate language, if you could study the art of getting at the mind of the multitude, as a dramatist has to study it in elaborating his points with reference to their effect upon theatre-goers, you could do very important and increasingly needed work in the field of popular and scientific education. . . .

Ever and truly yours,

E. L. YOUMANS.

"*Mr. George Iles, Montreal.*"

DR. D. H. COCHRAN:—

Dr. Cochran, President of the Brooklyn Polytechnic Institute, wrote as follows, in response to an invitation to speak:

"E. L. Youmans was my very dear friend. There are very few men whom I more respected and loved, and I exceedingly regret that I am unable to hear Mr. Fiske's paper and the tributes that will be paid to his memory and worth."

REV. JOHN W. CHADWICK:—

I will not go into the pulpit, for I think it must enjoy the fumigation which it has received this evening at the hands of laymen. I knew Prof. Youmans rather as a free-trader than as an evolutionist—probably because I usually met him at the house of our friend Richard Henry Manning, who was a good evolutionist but was very far gone as a protectionist, and needed light particularly on that subject. It was a characteristic of Mr. Youmans to give light where it was needed, and therefore he talked free-trade to Mr. Manning.

I am very glad that it has been our good fortune to have Mr. Fiske in this place, to deliver this lecture on Prof. Youmans. And I wish to express my own indebtedness to Mr. Fiske—who in his "*Cosmic Philosophy*" has made what is to my mind a clearer statement of the principles of Mr. Spencer's philosophy than Mr. Spencer has made in his own books. All who have any acquaintance with my sermons know that I have made great use of Mr. Fiske's works, by way of illustration and otherwise, for many years past. There are few writers whose thought has been so fruitful to my mind.

MR. FISKE:—

I am greatly moved by the words of Mr. Chadwick, and glad to know that my work has proved suggestive to his own thought.

I notice but one point in the remarks made here this evening that appears to require correction. I cannot think that the term "materialist" can properly be applied to Mr. Youmans. It is true that neither he nor Mr. Spencer have formulated a distinct set of views on theology. They were both kept so busy in estab-

lishing the principles of Evolution, in their general scientific and philosophical bearings, that they had no time to apply them to theology; that is a task for the next generation—and I have no doubt that in due time it will be successfully accomplished.

MR. HERBERT SPENCER:—

The following letter from Mr. Spencer was received too late to be read at this meeting, but was read at a subsequent meeting.

64 Avenue Road, Regent's Park,  
LONDON, N. W., March 13, 1890.

*Dear Mr. Skilton:—*

I received your telegram last night, and from the wording conclude that you wish some letter from me about Youmans which Fiske may read in his lecture on the 23d. I am very glad to respond to the request, and I cannot do this better than by giving you the following copy of a passage in my Autobiography concerning him:

"The relation thus initiated was extremely fortunate; for Prof. Edward L. Youmans was, of all Americans I have known or heard of, the one most able and most willing to help me. Alike intellectually and morally, he had in the highest degrees the traits conducive to success in diffusing the doctrines he espoused; and from that time to this he has devoted his life mainly to spreading throughout the United States the doctrine of Evolution. His love of wide generalizations had been shown years before in lectures on such topics as the correlation of the physical forces; and from those who heard him I have gathered that, aided by his unusual powers of exposition, the enthusiasm which contemplation of the larger truths of science produced in him, was in a remarkable degree communicated to his hearers. Such larger truths I have on many occasions observed are those which he quickly seizes—ever passing at once through details to lay hold of essentials; and, having laid hold of them, he clearly sets them forth afresh in his own way with added illustrations. But it is morally even more than intellectually that he has proved himself a true missionary of advanced ideas. Extremely energetic—so energetic that no one has been able to check his over-activity—he has expended all his powers in advancing what he holds to be the truth; and not only his powers but his means. It has proved impossible to prevent him from injuring himself in health by his exertions; and it has proved impossible to make him pay due regard to his personal interests. So that towards the close of life he finds himself wrecked in body and impoverished in estate by thirty years of devotion to high ends. Among professed worshippers of humanity, who teach that human welfare should be the dominant aim, I have not yet heard of one whose sacrifice on behalf of humanity will bear comparison with those of my friend."

Though the volume containing this passage will not be published until after my death, I am very willing that this tribute of admiration to my late friend should be made public now.

I am, faithfully yours,

HERBERT SPENCER.

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